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EXAMINER
TODD, GREGORY G

ART UNIT	PAPER NUMBER
2157	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<table>
<tr><td rowspan="3">Office Action Summary</td><td>Application No.</td><td>Applicant(s)</td></tr>
<tr><td>09/681,309</td><td>KENNAMER ET AL.</td></tr>
<tr><td>Examiner</td><td>Art Unit</td></tr>
<tr><td></td><td>Gregory G. Todd</td><td>2157</td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 September 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
          application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This office action is in response to applicant's amendment filed, 08 September

2006, of application filed, with the above serial number, on 16 March 2001 in which

claims 1, 15, and 19 have been amended. Claims 1-21 are therefore pending in the

application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 6-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Le et al

(hereinafter "Le", 6,145,089).

Le teaches the invention as claimed including server fail-over recovery (see

abstract).

As per Claim 6, Le teaches a system comprising:

a plurality of servers organized into one or more failover groups, each server

usually processing client requests of a respective type and processing the client

requests other than the respective type for other of the plurality of servers within a same

failover group when the other of the plurality of servers within the same failover group are offline(at least col. 3, lines 21-22; col. 2, lines 22-64; servers providing different services, redistributing services to other servers upon failure); and,

a database storing data responsive to client requests of any respective type and which is partitioned for caching over the plurality of servers, each server caching the data stored in the database responsive to client requests of the respective type, each server also temporarily caching the data stored in the database responsive to client requests other than the respective type when the other of the plurality of servers within the same failover group are offline (at least col. 2, lines 21-63; failover server redistribution of service groups).

As per Claim 7.

Le teaches the system of claim 6, further comprising a master server managing notifications from one or more clients and from the plurality of servers as to whether servers are offline, the master server verifying whether a server is offline when so notified, and where the server has been verified as offline, so notifying the plurality of servers other than the server that has been verified as offline (at least col. 4, lines 10-36; role manager managing heartbeat messages / server status).

As per Claim 8.

Le teaches the system of claim 6, wherein the one or more failover groups consists of one failover group, such that the plurality of servers are within the one failover group (at least col. 3 line 64 - col. 4 line 35).

As per Claim 9.

Le teaches the system of claim 6, further comprising one or more clients sending requests to the plurality of servers (at least col. 3, lines 47-67).

As per Claim 10, Le teaches a computer-readable medium having instructions stored thereon for execution by a processor to perform a method, wherein Le teaches:

determining whether a data server of a plurality of data servers is in a failover mode (at least col. 4, lines 30-35);

in response to determining that the data server is not in the failover mode, sending a request by a client to the data server (at least col. 4, lines 1-13; receiving healthy heartbeat signal);

determining whether sending the request was successful (disruption determination) (at least col. 4, lines 10-36; col. 2, lines 37-63);

in response to determining that sending the request was unsuccessful, entering the failover mode for the data server (at least col. 4, lines 10-50; col. 2, lines 37-63);

notifying a master server that sending the request to one of a plurality of data servers was unsuccessful (role manager not receiving heartbeat message) (at least col. 4, lines 10-36);

determining, by the client, a failover server, in a failover group, wherein the failover group is selected from a plurality of servers (elected server) (at least col. 2, lines 37-63); and,

sending the request to the failover server (eg. client accessing intranet through elected failover Server A after failure of Server C) (at least col. 2, lines 22-63; col. 3, lines 21-22) .

As per Claim 11.

Le teaches the medium of claim 10, the method initially comprising determining the data server as one of a plurality of data servers to which to send the request (eg. accessing intranet web server or customer support) (at least col. 2, lines 23-55).

As per Claim 12.

Le teaches the medium of claim 10, the method initially comprising in response to determining that sending the request was unsuccessful, repeating sending the request to the data server for a predetermined number of times, and entering the failover mode for the data server if sending the request for the predetermined number of times was still unsuccessful (at least col. 4, lines 27-36; col. 6, lines 30-36).

As per Claim 13.

Le teaches the medium of claim 10, the method further comprising in response to determining that the data server is in the failover mode, determining whether the data server has been in the failover mode for longer than a predetermined length of time (at least col. 4, lines 27-36; col. 6, lines 30-36); and,

in response to determining that the data server has not been in the failover mode for longer than the predetermined length of time, sending the request to the failover server (recieivng heartbeat message within amount of time) (at least col. 4, lines 27-36; col. 6, lines 30-36).

As per Claim 14.

Le teaches the medium of claim 13, the method further comprising in response to determining that the data server has been in the failover mode for longer than the

predetermined length of time, sending the request to the one of the plurality of data

servers (sending to elected server after time-out) (at least col. 4, lines 27-36; col. 6,

lines 30-36);

determining whether sending the request was successful (at least col. 4, lines 27-

36; col. 6, lines 30-36);

in response to determining that sending the request was unsuccessful, sending

the request to the failover server (at least col. 4, lines 27-36; col. 6, lines 30-36);

in response to determining that sending the request was successful, exiting the

failover mode for the data server (at least col. 4, lines 27-36; col. 6, lines 30-36); and,

notifying the master server that sending the request to the data server was

successful (reception of heartbeat message from each server resulting in no disruption)

(at least col. 4, lines 15-51; col. 6, lines 30-36).

As per Claims 15 and 18, Le teaches a method and computer-readable medium

having instructions stored thereon performed by a server configured in a failover group,

wherein the failover group is selected from a plurality of servers, wherein Le teaches:

receiving a request from a client (at least col. 2, lines 37-63; col. 3, lines 47-67;

eg. accessing intranet web server or customer support);

determining whether the request is of a type usually processed by the server (at

least col. 2, lines 22-63; eg. intranet);

in response to determining that the request is of the type usually processed by

the server, processing the request (at least col. 2, lines 22-63; eg. accessing intranet

web server 123 on Server C);

in response to determining that the request is not of the type usually processed

by the server, determining whether a second server that usually processes the type of

the request is indicated as offline (at least col. 2, lines 22-63; col. 4 line 61 - col. 5 line

50)

in response to determining that the second server that usually processes the type

of the request is indicated as offline, processing the request (at least col. 2, lines 22-63;

col. 4 line 61 - col. 5 line 50);

in response to determining that the second server that usually processes the type

of the request is not indicated as offline, sending by the server the request to the

second server (at least col. 2, lines 22-63; col. 4 line 61 - col. 5 line 50);

in response to determining that sending the request was unsuccessful,,

processing the request (at least col. 2, lines 22-63; col. 4 line 61 - col. 5 line 50; kernel

acting with heartbeat manager to elect one proper server to perform the services

requested); and,

notifying a master server that the second server is offline (at least col. 4, lines 10-

35; role manager sending heartbeat message / electing servers) .

As per Claim 16.

Le teaches the method of claim 15, further comprising receiving indication from a

master server that the second server is online (at least col. 4, lines 10-50; heartbeat

message status).

As per Claim 17.

Le teaches the method of claim 15, further comprising receiving indication from a master server that the second server is offline (at least col. 4, lines 10-50; heartbeat message status).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-5 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le in view of Arora et al (hereinafter " Arora ", 6,859,834).

As per Claim 1, Le teaches a system comprising:

a plurality of servers organized into one or more failover groups and over which data is partitioned, each server usually processing client requests for data of a respective type and processing the client requests for data other than the respective type for other of the plurality of servers within a same failover group when the other of the plurality of servers within the same failover group are offline (at least col. 3, lines 21-22; col. 2, lines 22-64; servers providing different services, redistributing services to other servers upon failure); and,

a master server managing notifications from clients and from the plurality of servers as to whether servers are offline, the master server verifying whether a server is offline when so notified, and where the server has been verified as offline, so notifying

the plurality of servers other than the server that has been verified as offline (at least

col. 4, lines 10-36; role manager managing heartbeat messages / server status).

Le fails to explicitly teach managing notifications *directly* from one or more

clients. However, the use and advantages for using such a system is well known to one

skilled in the art at the time the invention was made as evidenced by the teachings of

Arora. Arora teaches a client computer directly communicating with an application

server and based on client information, marking a server as offline (at least col. 8, lines

15-44; col. 16 line 41 – col. 17 line 61). Therefore, it would have been obvious to one of

ordinary skill in the art, at the time the invention was made, to incorporate the use of

Arora's system into Le as this would enhance Le's system to help in the offline server

determination process, as any information on the status of a server being offline is vital

to maximize load balancing potential.

As per Claim 2.

Le teaches the system of claim 1, further comprising a database storing data

responsive to client requests of any respective type and which has been partitioned

over the plurality of servers, each server caching the data stored in the database

responsive to client requests of the respective type (at least col. 2, lines 21-63; failover

server redistribution of service groups).

As per Claim 3.

Le teaches the system of claim 2, wherein each server further temporarily caches

the data stored in the database responsive to client requests other than the respective

type when the other of the plurality of servers within the same failover group are offline

(at least col. 2, lines 21-63; failover server redistribution of service groups).

As per Claim 4.

Le teaches the system of claim 1, wherein the one or more failover groups

consists of one failover group, such that the plurality of servers are within the one

failover group (at least col. 3 line 64 - col. 4 line 35).

As per Claim 5.

Le teaches the system of claim 1, further comprising one or more clients sending

requests to the plurality of servers (at least col. 3, lines 47-67).

As per Claim 19, Le teaches a machine-readable medium having instructions

stored thereon for execution by a processor of a master server to perform a method

comprising:

receiving a notification from a client that a server may be offline (at least col. 4,

lines 10-50; eg. no heartbeat message);

contacting the server (at least col. 4, lines 10-50);

determining whether contacting the server was successful (at least col. 4, lines

10-50);

in response to determining that contacting the server was unsuccessful, marking

the server as offline ((at least col. 4, lines 1-51; not connecting via the first heartbeat

network and attempting on the second heartbeat network); and,

notifying a failover group of servers selected by the client from a plurality of

servers, wherein the client is in failover mode, and wherein the failover group is capable

of processing requests for partitioned data of a respective type and partitioned data

other than its respective type, other than the server marked as offline that the server is

offline (at least col. 4, lines 10-50; col. 3, lines 21-22; col. 2, lines 22-64; servers

providing different services, redistributing services to other servers upon failure

heartbeat message status with election of services).

Le fails to explicitly teach receiving notifications *directly* from a client. However,

the use and advantages for using such a system is well known to one skilled in the art

at the time the invention was made as evidenced by the teachings of Arora. Arora

teaches a client computer directly communicating with an application server and based

on client information, marking a server as offline (at least col. 8, lines 15-44; col. 16 line

41 – col. 17 line 61). Therefore, it would have been obvious to one of ordinary skill in the

art, at the time the invention was made, to incorporate the use of Arora's system into Le

as this would enhance Le's system to help in the offline server determination process,

as any information on the status of a server being offline is vital to maximize load

balancing potential.

As per Claim 20.

Le teaches the medium of claim 19, the method further comprising periodically

checking the server that has been marked as offline to determine whether the server is

back online (at least col. 4, lines 1-51; col. 5, lines 29-45; receiving updates and

heartbeat messages from servers).

As per Claim 21,

Le teaches the medium of claim 20, wherein periodically checking the server that has been marked as offline comprising:

contacting the server (at least col. 6 line 47 - col. 7 line 30; role manager and service manager staying offline until recovery and transitioning online);

determining whether contacting the server was successful (at least col. 6 line 47 - col. 7 line 30; role manager and service manager staying offline until recovery and transitioning online);

in response to determining that contacting the server was successful, marking the server as online (at least col. 6 line 47 - col. 7 line 30; role manager and service manager staying offline until recovery and transitioning online); and,

notifying the plurality of servers other than the server marked as online that the server is online (at least col. 6 line 47 - col. 7 line 30; role manager and service manager staying offline until recovery and transitioning online / using heartbeat messages).

Response to Arguments

6.   Applicant's arguments with respect to claims 1-5 and 19-21 have been
considered but are moot in view of the new ground(s) of rejection.

7.   Applicant's arguments with respect to claims 6-18 filed 08 September 2006 have
been fully considered but they are not persuasive.

Applicants argue Le fails to teach the comprehensive features of claim 6. In
response to applicant's argument that the references fail to show certain features of
applicant's invention, it is noted that the features upon which applicant relies (i.e.,
storing and *then* being partitioned) are not recited in the rejected claim(s). Although the
claims are interpreted in light of the specification, limitations from the specification are
not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed.
Cir. 1993). Further, Examiner maintains and reiterates previous responses to this
argument. As Applicant has previously admitted, Le teaches a group of servers offering
different services and upon a failure of one server offering a service, the service being
transferred to another server to provide the server to client requests. In this case the
data is inherently partitioned (as Applicant notes in the background of the application,
see paragraph 5), in order for the other servers to provide the other services, else the
other servers would not be able to perform the service switching (and data would be out
of date if not partitioned accordingly, thus Le's system would not work in such a case).
Thus Le teaches partitioned data so a server processing a certain type of client
requests can process other types of client requests upon another server being offline.
Thus, Le teaches the claimed features as Le teaches one server providing primarily one

service and another server providing primarily another different service, however, when

that server and thus service are no longer available, the other (backup) server will

provide that service accordingly.

Applicants further argue Le does not teach the limitations of claim 15 being

performed by a server. However, Le teaches the limitations, as Le teaches a role

manager performing the functions described when a client requests the use of a service

of a server, it determines the appropriate server the the service requested and directs

the request to the appropriate server it has determined can fulfill the service request

from the client.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Newly cited Clark (col. 9 line 62 – col. 10 line 25; client or server notifying another client or server as to an offline status), in addition to previously cited Podanoffsky (server groups organized according to respective functions), Mashayekhi et al, Harvell, Bruck et al, Ishida (master computer management), Murphy et al (object-level failover specifics), Purcell et al (failover with heartbeat network), Glenn, II et al, Delaney et al, Hemphill et al, Rizvi et al, Abramson et al, Schoenthal et al, and Nguyen et al are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G. Todd whose telephone number is (571)272-4011. The examiner can normally be reached on Monday - Friday 9:00am-6:00pm w/ first Fridays off.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571)272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Gregory Todd

Patent Examiner

Technology Center 2100

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